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Montana Department of Transportation

FINAL REPORT

SEP 14 DESIGN-BUILD PROJECT

For

LINCOLN ROAD/I-15 INTERCHANGE SAFETY IMPROVEMENT PROJECT

Lewis and Clark County

Project Number: IM 15-4(91)200
Control Number: 4815

April 27, 2006

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MONTANA DEPARTMENT OF TRANSPORTATION

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EXECUTIVE SUMMARY

Introduction - The MDT Design-Build Team and Technical Review Committee (TRC) for this project developed the necessary documentation, solicited Statements of Qualifications and requested Technical Proposals and Bid Price Proposals from three short-listed Design-Build Firms. A design-build contract was executed for the Lincoln Road/I-15 Interchange Safety Improvement Project on February 24, 2005, the Notice to Proceed was issued on March 15, 2005 and the project was substantially completed on September 8, 2005.

Purpose - The proposed Design-Build contracting method is an innovative process that is being considered by transportation agencies for the construction of highway projects. The Design-Build contracting method places the responsibility of design and construction with a single legal contracting entity. The Design-Build contracting method may produce a more cost efficient design as a result of the designer giving greater consideration to construction methods. This contracting method should result in a reduction in the time required from initiation of the project to construction completion of the safety improvements. Improved sight distance and roadway widening should reduce the accident rate on the over crossing county road in the vicinity of the interchange ramp termini. MDT anticipated, and the final project demonstrates, that use of the Design-Build contracting method would result in a more cost effective project with a shorter overall project delivery period.

Project Scope - This project included Design and Construction of safety improvements to improve sight distance and visibility on Lincoln Road at the Lincoln Road Interchange on Interstate 15, Reference Post 200.09, in Lewis and Clark County.

Request For Qualifications - The Request for Qualifications (RFQ) package was advertised on August 23, 2004. Statement of Qualifications (SOQ) responses were received from five design-build teams (Firms) on October 7, 2004. A Technical Review Committee (TRC) consisting of eight MDT staff members from various project-related disciplines and one FHWA representative independently evaluated and scored the SOQ of the five teams based on established Evaluation Criteria and Scoring Guide. One Firm was considered non-responsive because its SOQ exceeded the maximum page limit required by the RFQ and another Firm did not receive an evaluation score high enough to be short-listed. The TRC produced a ranked short list of three Firms that were invited to submit Proposals.

Technical Proposal - MDT developed selection procedures to provide a balanced assessment of the experience and qualifications of the Firm, the proposed project plan, the project completion time and the project cost. Proposals were submitted in two separate covers, one containing the Technical Proposal and one sealed containing the Bid Price Proposal 24 days later. The Technical Proposals were scored first. This score was based on the criteria listed in the Scoring Table below. All Technical Proposals were scored and submitted to the Selection Committee before any Bid Price Proposals were opened. The TRC reviewed and evaluated each Technical Proposal according to the following criteria based on a maximum possible value of 6,000 points per TRC member.

Bid Price Proposal: - Contract Plans Bureau publicly opened the sealed Bid Price Proposals at 10:00 am, January 10, 2005. Contract Plans Bureau and the Design-Build Engineer divided each

Firm's total bid price amount by the Technical Proposal total score provided by the TRC to obtain an adjusted score. The lowest adjusted score is considered the best value proposal. Contract Plans Bureau and the Design-Build Engineer provided the adjusted score and supporting information for each Firm to the Selection Committee.

The following formula was used to determine the Adjusted Score for each Firm:

$$\text{Adjusted Score} = \frac{\text{Bid Price Proposal Amount (\$)}}{\text{Technical Proposal Total Score}}$$

The Selection Committee reviewed the Bid Price Proposals and Technical Proposal evaluation and scoring information provided by the TRC and approved an award recommendation.

Post Construction De-Briefing – MDT's Design-Build Engineer arranged and facilitated separate de-briefing meetings with staff members from MDT Great Falls District, MDT Bridge Bureau, Construction Contractor and the Design Consultant. The meetings were conducted between March 24 and April 11, 2006. The purpose of the Post Construction De-Briefings is to provide a process for all stakeholders to review and discuss the completed project and provide input related to the design and construction phase of MDT's Design-Build process.

CONCLUSIONS

Use of the Design-Build contracting method for the second MDT Pilot Project has accomplished the purpose of the program as stated in the work plan by producing a savings in time and reduction in the MDT resources necessary to design and construct the project. The savings in time is clearly evident since the project proceeded from preliminary engineering through R/W acquisition to contract award in six months and the design and construction was substantially completed in six months. The total one year time period is much less than similar design/bid/build projects that usually require as much as two years from preliminary engineering to contract advertisement, plus the time necessary to award and construct the project, typically an additional six to nine months. This project has been another positive step in the Design-Build Pilot Program process that will allow MDT to explore this innovative contracting method. Based on in-house and industry reactions and comments received during the post construction de-briefings, the initial opinion is that the Design-Build contracting method has been successful for this project.

The lessons learned from this project and the other two Design-Build Pilot Projects will provide relevant and valuable information that can be utilized by legislators in deliberating the merits of continuing the design-build contracting program and providing an additional tool that MDT can use to expedite project delivery.

This report was prepared by:

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MONTANA DEPARTMENT OF TRANSPORTATION

FINAL REPORT FOR SEP 14 DESIGN-BUILD PROJECT

Lincoln Road/I-15 Interchange Safety Improvement Project
IM 15-4(91)200 [CN 4815]

I. INTRODUCTION

The Montana Department of Transportation (MDT) submits this final report under the provisions of Special Experimental Project No. 14 (SEP 14) for the use of innovative contracting practices.

The MDT Design-Build Team and Technical Review Committee (TRC) for this project developed the necessary documentation, solicited Statements of Qualifications and requested Technical Proposals and Bid Price Proposals from three short-listed Design-Build Firms. A design-build contract was executed for the Lincoln Road/I-15 Interchange Safety Improvement Project on February 24, 2005, the Notice to Proceed was issued on March 15, 2005 and the project was substantially completed on September 8, 2005.

II. PURPOSE

The proposed Design-Build contracting method is an innovative process that is being considered by transportation agencies for the construction of highway projects. The Design-Build contracting method places the responsibility of design and construction with a single legal contracting entity. The Design-Build contracting method may produce a more cost efficient design as a result of the designer giving greater consideration to construction methods. This contracting method should result in a reduction in the time required from initiation of the project to construction completion of the safety improvements. Improved sight distance and roadway widening should reduce the accident rate on the over crossing county road in the vicinity of the interchange ramp termini. MDT anticipated, and the final project demonstrates, that use of the Design-Build contracting method would result in a more cost effective project with a shorter overall project delivery period.

MDT also desires to use the Design-Build contracting method as a means of exploring innovative contracting methods. Historically, MDT has used the design/bid/build method and has very limited experience with the Design-Build contracting method. With increasing demands on available highway funds, reductions in MDT staffing levels and program funding increases resulting from SAFETY-LEU, MDT is actively pursuing methods that have the potential to address these issues and enhance the use of each transportation tax dollar. The Design-Build contracting method is a potential tool by which this goal can be accomplished.

III. SELECTION AND AWARD PROCESS

A. PROJECT SCOPE

This project included Design and Construction of safety improvements to improve sight distance and visibility on Lincoln Road at the Lincoln Road Interchange on Interstate 15, Reference Post 200.09, in Lewis and Clark County. The following are the major scope of work items related to the proposed safety improvement project.

Roadway

- Widened Lincoln Road to an approximate width of 13.8 meters from bridge ends to ramp intersections.
- Provided for a speed of 100 km/hr.
- Provided WB-20 truck turning movements for all ramp radii.
- Transitioned widened roadway back to existing roadway beyond each ramp intersection using 20:1 tapers.
- Maximized intersection sight distance.
- Did not decrease existing Stopping Sight Distance (SSD).
- Provided new guardrail on Lincoln Road outside of the sight triangle. Designed and constructed guardrail in accordance with current MDT/AASHTO standards for length of need and utilizing approved optional terminal sections. Provided surfacing under guardrail.
- Provided new plant mix surfacing for widening and overlaid existing surfaces.
- Extended and/or modified existing drainage culverts as required.
- Replaced all four existing cattle guards.
- Provided required fencing.
- No landscaping or irrigation was required beyond site restoration and re-vegetation.

Bridge

- Widened both sides of the existing bridge equally and provided a total finished bridge width of 13.6 meters from inside of barrier to inside of barrier.
- Maintained a minimum vertical bridge clearance of 5.2 meters from low beam above I-15.
- Removed existing expansion deck joints and guard angles and provided a continuous slab.
- Removed the existing concrete deck surface to an average 50 mm depth by hydro-demolition and provided 75 mm minimum thickness of new cast-in-place latex concrete overlay on the entire bridge deck.
- Provided new cast-in-place concrete barrier rail on both sides of the bridge interconnected with steel.

Utilities

- Adjusted and relocated existing utilities required for construction of the improvements.

Construction Sequencing

- Maintained one-lane traffic in each direction on Lincoln Road, including the bridge, at all times.
- Maintained two-lane traffic in both directions on I-15 during hours of darkness. During daylight hours, shoulders and one lane were closed for short durations to facilitate construction.
- Provided positive falling object protection under the overpass work areas to protect traffic on I-15.

Permits and Environmental Process

- Provided temporary and permanent environmental permits required for the project.
- MDT completed the NEPA/MEPA document prior to issuing the RFP.

General

- MDT provided all right of way services and obtained all required right of way prior to issuing the RFP.
- Project did not impact the irrigation facilities (siphon and ditch) adjacent to the project.
- The Firm provided a Quality Management Plan.
- MDT provided construction engineering and inspection services (Quality Assurance and Independent Assurance).

B. SCHEDULE OF EVENTS

Below is the schedule of events that took place in the selection process.

DATE	EVENT
August 23, 2004	Advertised RFQ
October 7, 2004	SOQ Responses Due
October 20, 2004	Firms Short-Listed
November 15, 2004	Issued RFP
November 18, 2004	Question deadline for the Pre-Proposal Meeting - 4:00 p.m. local time
November 19, 2004	Pre-Proposal Meeting (1:00 to 3:00 p.m. in 2nd Floor East and West Conference Room, 2701 Prospect, Helena, MT)
December 17, 2004	Technical Proposal Due Date by 10:00 a.m. local time
January 10, 2005	Bid Price Proposal Due Date by 10:00 a.m. local time
January 10, 2005	Public Bid Price Proposal Opening at 10:00 a.m. local time in Contract Plans Bureau, Room 101, 2701 Prospect, Helena, MT
February 24, 2005	Contract Awarded
March 15, 2005	Issued Notice to Proceed
September 8, 2005	Construction Substantially Completed

C. HISTORY

Request For Qualifications:

The Request for Qualifications (RFQ) package was advertised on August 23, 2004. Statement of Qualifications (SOQ) responses were received from five design-build teams (Firms) on October 7, 2004. A Technical Review Committee (TRC) consisting of eight MDT staff members from various project-related disciplines and one FHWA representative independently evaluated and scored the SOQ of the five teams based on established Evaluation Criteria and Scoring Guide. One Firm was considered non-responsive because its SOQ exceeded the maximum page limit required by the RFQ and another Firm did not receive an evaluation score high enough to be short-listed. The TRC produced a ranked short list of three Firms that were invited to submit Proposals.

MDT developed selection procedures to provide a balanced assessment of the experience and qualifications of the Firms. These procedures were used to determine the ranked short list of Firms to receive the RFP and be invited to submit proposals. The TRC reviewed and evaluated the SOQ according to the following criteria based on a maximum possible value of 10,000 points per TRC member.

SOQ Scoring Guide:

Each evaluation criteria was assigned a Scoring Weight and the TRC ranked each Firm by criteria on a 0 to 10 scale, with 10 being best. The TRC considered the following guidelines when determining the ranking score for each criteria.

Superior Response (9.5-10.0): A superior response will be a highly comprehensive, excellent reply that meets all of the requirements of the areas within the specific criteria. In addition, the response covers areas not originally addressed within the SOQ evaluation criteria and includes additional information and recommendations that would prove both valuable and beneficial to MDT. This response is considered to be an excellent standard, demonstrating the Firm's authoritative knowledge and understanding of the project.

Very Good Response (8.5-9.4): A very good response will provide useful information, while showing experience and knowledge within the evaluation criteria. The response is well thought out and addresses all requirements set forth in the RFQ. The Firm provides insight into their expertise, knowledge and understanding of the subject matter outlined in the criteria.

Good Response (7.5-8.4): A good response meets all the requirements of the RFQ and has demonstrated in a clear and concise manner a thorough knowledge and understanding of the subject matter outlined in the criteria. This response demonstrates an above average performance with no apparent deficiencies noted.

Fair Response (6.5-7.4): A fair response meets the requirements of the RFQ in an adequate manner. This response demonstrates an ability to comply with guidelines, parameters, and requirements with no additional information put forth by the Firm.

Poor Response (6.0-6.4): A poor response minimally meets most requirements of the RFQ. The Firm has demonstrated knowledge of the subject matter only as outlined in the criteria.

Inadequate Response (0-5.9): An inadequate response does not meet the requirements of the RFQ. The Firm has not demonstrated knowledge of the subject matter outlined in the RFQ and their response is considered inadequate.

SOQ EVALUATION CRITERIA SCORING TABLE

EVALUATION CRITERIA NO.	DESCRIPTION	SCORING WEIGHT	RANKING	TOTAL SCORE
1	Provide an SOQ transmittal letter that identifies the legal entity (business structure) authorized to render the design-build services and provide a Letter of Commitment executed by each principal company of the Firm's Design-Build team.	10		
2	Evidence or proof of capability to meet the requirements for insurance and bonding capacity.	10		
3	Identify participating companies and business addresses of the Firm members. Provide an organization chart relating to the project and include the names, titles, classifications and experience (resumes) of key personnel for each of the Firm members and the overall Project Manager, Design Manager, Construction Manager and Quality Control Manager.	200		
4	Demonstrate past experience of Firm members working together on similar type projects, both for construction and architectural/engineering services. May include design-build and design/bid/build projects.	100		
5	Provide a listing of active and completed design-build projects similar to this project, including starting date and completion date or anticipated completion date, budget, owner performance evaluation (if available), references, points of contact, telephone numbers of the proposed Firm members. Past design-build experience may be drawn from projects contracted by MDT, other DOT, private industry or local governments entities.	150		
6	Other Experience: Provide a listing of active and completed projects, other than design-build projects, that are similar to this project including references, points of contact and telephone numbers for the owner and team members performing engineering design and construction.	150		

7	Approach and Understanding of Project Requirements: Outline any potential innovations in design and construction mean/methods. Briefly describe the project issues identified and proposed resolutions by the Firm.	200		
8	Design-Build Information: List each Firm member's current Experience Modification Rate and provide copies of each Firm member's OSHA Form 200 for the last two years.	20		
9	Provide evidence of each Firm member's experience with local and state government entities, permit and regulatory agencies and community groups.	50		
10	List details (dates, locations and reasons) of the Firm and its members of any citations received from the Department of Environmental Quality, Army Corps of Engineers, Environmental Protection Agency, any National Pollutant Discharge Elimination System, Montana National Pollutant Discharge Elimination System, or other agency permit violations during the last three years.	30		
11	Provide an outline of your Firm's proposed quality management plan for all project phases that incorporates effective QC/QA.	80		

Request for Proposal (RFP) packages were issued to the three short-listed Firms on November 15, 2004 with Technical Proposal responses due on December 17, 2004 and Bid Price Proposal responses due on January 10, 2005.

Three Technical Proposals were received on December 17, 2004 and three sealed Bid Price Proposal packages were received and publicly opened at 10:00 AM on January 10, 2005. Proposals were received from the following Firms:

- Construction Solutions, Inc./Kadrmas Lee & Jackson/Tamietti Construction/SK Geotechnical
- Dick Anderson Construction, Inc./Stahly Engineering & Associates
- Frontier West, LLC/Morrison Maierle, Inc.

The TRC evaluated and scored the written Technical Proposals submitted by each Firm prior to opening the Bid Price Proposals. This score was based on evaluation criteria and scoring guidelines provided in the RFP package.

Technical Proposal:

MDT developed selection procedures to provide a balanced assessment of the experience and qualifications of the Firm, the proposed project plan, the project completion time and the project cost. Proposals were submitted in two separate covers, one containing the Technical Proposal and one sealed containing the Bid Price Proposal 24 days later. The Technical Proposals were

scored first. This score was based on the criteria listed in the Scoring Table below. All Technical Proposals were scored and submitted to the Selection Committee before any Bid Price Proposals were opened. The TRC reviewed and evaluated each Technical Proposal according to the following criteria based on a maximum possible value of 6,000 points per TRC member.

Technical Proposal Scoring Guide:

Each evaluation criteria was assigned a Scoring Weight and the TRC ranked each Firm by criteria on a 0 to 10 scale, with 10 being best. The TRC considered the following guidelines when determining the ranking score for each criteria.

Superior Response (9.5-10.0): A superior response will be a highly comprehensive, excellent reply that meets all of the requirements of the areas within the specific criteria. In addition, the response covers areas not originally addressed within the RFP/DCCP evaluation criteria and includes additional information and recommendations that would prove both valuable and beneficial to MDT. This response is considered to be an excellent standard, demonstrating the Firm's authoritative knowledge and understanding of the project.

Very Good Response (8.5-9.4): A very good response will provide useful information, while showing experience and knowledge within the evaluation criteria. The response is well thought out and addresses all requirements set forth in the RFP/DCCP. The Firm provides insight into their expertise, knowledge and understanding of the subject matter outlined in the criteria.

Good Response (7.5-8.4): A good response meets all the requirements of the RFP/DCCP and has demonstrated in a clear and concise manner a thorough knowledge and understanding of the subject matter outlined in the criteria. This response demonstrates an above average performance with no apparent deficiencies noted.

Fair Response (6.5-7.4): A fair response meets the requirements of the RFP/DCCP in an adequate manner. This response demonstrates an ability to comply with guidelines, parameters, and requirements with no additional information put forth by the Firm.

Poor Response (6.0-6.4): A poor response minimally meets most requirements of the RFP/DCCP. The Firm has demonstrated knowledge of the subject matter only as outlined in the criteria.

Inadequate Response (0-5.9): An inadequate response does not meet the requirements of the RFP/DCCP. The Firm has not demonstrated knowledge of the subject matter outlined in the RFP/DCCP and the response is considered inadequate.

TECHNICAL PROPOSAL EVALUATION CRITERIA SCORING TABLE

EVALUATION CRITERIA NO.	DESCRIPTION	SCORING WEIGHT	RANKING	TOTAL SCORE
1	Credit will be given for a timely, complete and comprehensive quality management plan that includes all phases of the project and incorporates effective QC/QA for design and construction.	70		
2	Credit will be given for a comprehensive and logical schedule. Proper attention should be provided to the project's critical path elements and project float. The project duration will not exceed 180 calendar days. MDT encourages proposals that demonstrate project completion in less than 180 calendar days. **Note:** *Proposals that exceed the 180-calendar day duration specified will be considered non-responsive.*	120		
3	Credit will be given for the project-designated allocation (distribution and quantity) of design and construction resources. Credit will also be given for proposed plans to coordinate project activities for design, plan preparation, and obtaining approval of project component plans and specifications currently with construction activities of other project components that will minimize design changes and impacts to completed construction work.	100		
4	Credit will be given for innovation in design and construction methods that minimize public impacts, reduce costs and accelerate project delivery by reducing the total project duration. Credit will also be given for design proposals that improve functionality and safety of the interchange by maximizing Intersection Sight Distance, increasing the existing Stopping Sight Distance and for exceeding minimum bridge and roadway material requirements to enhance project durability and reduce life cycle costs.	180		
5	Credit will be given for the Firm's experience on similar work and the individual team member's successful design-build experience. Consideration will be given to Firm leadership and areas of responsibility, Firm internal coordination plan, and Firm commitment to and history of providing a quality project, completed on time and within budget.	80		
6	Claim history records for each Firm member will be reviewed, evaluated and scored based on claims pertaining to additional compensation or time extensions that are not negotiated and resolved through an Administrative Settlement, or final estimate quantity disputes that proceed, after final acceptance, to litigation or arbitration. History of disputes being escalated to the Board of Contract Appeals (or the equivalent with other owners) by a member of the Firm will also be considered.	50		

The TRC submitted a final Technical Proposal score for each Firm to Contract Plans Bureau. All short-listed Firms were notified of the date, time and location of the public opening of the sealed Bid Price Proposals.

Contract Plans Bureau publicly opened the sealed Bid Price Proposals at 10:00 AM, January 10, 2005. Contract Plans Bureau and the Design-Build Engineer divided each Firm's total bid price amount by the Technical Proposal total score provided by the TRC to obtain an adjusted score. The lowest adjusted score is considered the best value proposal. Contract Plans Bureau and the Design-Build Engineer provided the adjusted score and supporting information for each Firm to the Selection Committee.

The following formula was used to determine the Adjusted Score for each Firm:

$$\text{Adjusted Score} = \frac{\text{Bid Price Proposal Amount (\$)}}{\text{Technical Proposal Total Score}}$$

The Selection Committee reviewed the Bid Price Proposals and Technical Proposal evaluation and scoring information provided by the TRC. The following is a summary of the proposal results:

FIRM	BID PRICE PROPOSAL AMOUNT	TECHNICAL PROPOSAL TOTAL SCORE	ADJUSTED SCORE (Best Value)
Dick Anderson Construction, Inc./ Stahly Engineering & Associates	$1,344,307.85	36,124	37.214
Frontier West, LLC/ Morrison Maierle, Inc.	$2,050,000.00	44,668	45.894
Construction Solutions, Inc./ Kadrmas Lee & Jackson/ Tamietti Construction/ SK Geotechnical	$1,897,000.00	40,510	46.828

After reviewing the Technical Proposal Evaluation and Scoring information provided by the TRC and the Bid Price Proposals, the Selection Committee held a meeting with Dick Anderson Construction, Inc. and asked the following question: ***Since the Technical Proposal submitted by Dick Anderson construction, Inc. did not provide for 2-lane, 2-way traffic across the bridge during hours of darkness in Phase I-B of the traffic control plan as required by the RFP, how does Dick Anderson Construction, Inc. propose to address this issue?*** Dick Anderson Construction, Inc. responded via e-mail on 01/14/05 that the Firm proposed to address the issue by revising their scope of work to comply with the RFP and increasing their Bid Price Proposal to $1,797,807.04 (an increase of $453,499.19 over their original Bid Price Proposal amount).

The Selection Committee reviewed Evaluation Criteria #6 response by Frontier West, LLC regarding claims history. Section 6 of the Technical Proposal states: ***"During 2002, 2003 and 2004, neither Frontier West, LLC nor Morrison-Maierle, Inc. has had any claims that have gone to litigation."*** The Selection Committee obtained information that shows Frontier West, LLC was involved in one MDT project claim that was settled by litigation in 2001 and is currently involved in an MDT project claim that was filed in 2003 and is still pending.

Since all three Bid Price Proposals exceeded the original Engineer's Cost Estimate of $1,024,350.00 by more than 25%, the TRC was directed to review the scope of work and original cost estimate. After review of the original Cost Estimate, item costs were updated and errors were discovered and corrected that resulted in substantial cost increases. The original Cost Estimate was subsequently revised to $1,675,550.00, which is within 25% of the total Bid Price Proposal amounts of all proposing Firms.

Based on review of the options, the Selection Committee recommended the following and the Montana Highway Commission subsequently awarded the contract on February 24, 2005:

- Dick Anderson Construction, Inc. proposal was determined to be non-responsive to the RFP.

- Dick Anderson Construction, Inc. is not eligible for the stipend payment. ***(Per direction of the Montana Highway Commission, Dick Anderson Construction, Inc. was paid the stipend amount of $8,000.00.)***

- Frontier West, LLC proposal was found to contain irregularities and determined to be non-responsive for the following reasons: 1) Did not provide the calendar years specified in the RFP; 2) Did not identify MDT projects claims in calendar years 2001 and 2003; and 3) Did not identify all claims over $50,000 as required by the RFP, not just those having gone to litigation.

- Frontier West, LLC is not eligible for the stipend payment. ***(Per direction of the Montana Highway Commission, Frontier West, LLC was paid the stipend amount of $8,000.00.)***

- Award contract to the Construction Solutions, Inc. team, with the lowest Adjusted Score considered the Best Value for MDT, in the amount of $1,897,000.00.

D. INDUSTRY REACTION TO THE SELECTION AND AWARD PROCESS

Industry reaction was solicited using a questionnaire that was sent to each Firm responding to the RFQ and short-listed Firms that respond to the RFP. Questions and comments received from industry during the RFQ process, from the pre-proposal meeting and during the RFP and proposal process were utilized to develop the following list of reactions and effects on the Design-Build Pilot Program. In addition to industry reactions, reactions and comments from TRC members regarding the evaluation and scoring process for the SOQ and Technical Proposals are also included.

RESPONDER	REACTION	PROGRAM IMPACT
DB Contractor	Time allowed for submittal and information provided with RFQ was adequate.	None. Time allowed for preparation of SOQ was adequate for this project.
DB Contractor	Time allowed (24 days) between the date Technical Proposals were due and date Bid Price Proposals were due was adequate to allow completion of preliminary plans and quantities for obtaining price quotes from subcontractors and suppliers.	None. Bid Price Proposals will be due at least 14 calendar days after the Technical Proposals for future design-build pilot projects, depending on size and complexity.
TRC Members	The evaluation and scoring criteria included in the RFP coincided with the submittal sections required in the Technical Proposal which provided for each section to only contain specific criteria information. This made it much easier for Proposers to organize their proposals and review and evaluation by the TRC.	RFQ and RFP for future design-build pilot projects will continue requiring separate sections in the SOQ and Technical Proposal for each evaluation criteria.
DB Contractors and Design Consultants	There was concern expressed related to timely response by utility owners with their proposed plans and estimated costs required to relocate/adjust utilities prior to the Technical and Bid Price Proposal submittal due dates.	As a result of these concerns, future MDT design-build projects will require designation of a Utility Coordinator on the team and MDT will schedule a meeting with all utility owners and short-listed Firms immediately following release of the RFP.
DB Contractors, Design Consultants and TRC Members	There was some confusion regarding how to address Innovations and Options/Alternatives in the Technical and Bid Price Proposals.	Future MDT design-build pilot projects will include additional detailed explanations on how and where to include Innovations and Options/Alternatives in the Technical and Bid Price Proposals.
DB Contractors, Design Consultants and TRC Members	Overall, the MDT Design-Build Pilot Program provides a fair and equitable procedure for evaluating, scoring and selecting a design-build Firm.	Only minor procedural and text changes to the project work plan have resulted from reactions received during the initial stages of the second design-build pilot project.

IV. DESIGN AND CONSTRUCTION PROCESS

A. GENERAL

The following were key persons directly involved in design and construction of the project and participated in the post construction de-briefing process:

Jack Carlson – Engineering Project Manager, MDT Great Falls District
Bill Durbin – Engineering Project Coordinator, MDT Great Falls District
Ed Toavs, P.E. – District Operations Engineer, MDT Great Falls District
Kevin McCray, P.E. – Bridge Area Manager, MDT Great Falls District
Bob Ganter – Project Manager, Construction Solutions, Inc. – Helena, MT
Craig Kubas, P.E., Design Manager, Kadrmas, Lee & Jackson, Inc. – Dickinson, ND

B. PURPOSE

The MDT Design-Build Engineer arranged and facilitated separate de-briefing meetings with staff members from MDT Great Falls District, MDT Bridge Bureau, Construction Contractor and the Design Consultant. The meetings were conducted between March 24 and April 11, 2006.

The purpose of the Post Construction De-Briefings is to provide a process for all stakeholders to review and discuss the completed project and provide input related to the design and construction phase of MDT's Design-Build process. The following agenda was used to ensure specific items were addressed, but participants were encouraged to present other topics or issues during the meeting that were not listed on the agenda.

1. ***Contract Administration***
    a. Identify specific items that **enhanced** the overall design-build process and had a positive impact on project progress and quality.
    b. Identify specific items that were considered **shortcomings** in the overall design-build process and did or could have had a negative impact on project progress and quality.
2. ***Specific Issues/Problems and Subsequent Solutions***
3. ***Plans/Specifications Review and Approval Process***
4. ***Document Control***
5. ***Scheduling and Time to Complete Project.***
6. ***Quality Control***
    a. Design
    b. Construction
7. ***Coordination with MDT Functional Units***
8. ***Change Orders***
9. ***Potential Claims***

10. ***New Technology or Construction Methods Used***
11. ***Any Innovative Solutions or Methods.***
12. ***R/W Issues***
13. ***Permit Issues***
14. ***Other Items/Issues***

C. POST CONSTRUCTION DE-BRIEFING COMMENTS

AGENDA ITEMS	MDT FIELD STAFF
Contract Administration	Contract administration for the construction work was very similar to a normal design/bid/build project. Much more design involvement, approvals and overall paperwork was required of the EPM. The QC requirements and who is responsible for specific QC testing should be better defined in the RFP or in separate QC Guidelines. Overall, the project resulted in a good quality product.
Specific Issues and Solutions	1. Could have been more frequent and better communications between Contractor, Designer and MDT. 2. It was recommended that prior to future D-B projects, additional D-B training be provided to MDT staff as well as designers and contractors. 3. There should have been more detail (for clarity) included in the RFP related to guardrail replacement, existing sign replacement and specific paving requirements for areas behind the new guardrail. Issues related to the design and construction of these items were eventually resolved through the Issue Resolution process.
Plans & Specifications Approval Process	1. There was initial confusion regarding the number of copies for each submittal and who should receive copies. For future D-B projects, the RFP should identify how many copies of each report and plan submittal should be made and designate which agency and functional unit within MDT should receive a copy for review and comment. 2. It was recommended that future D-B projects require a 65% complete submittal prior to the 90% complete submittal to allow more opportunity for revisions and changes. 3. RFP should list the key contacts for MDT Functional Units responsible for the review and approvals so the EPM and D-B Firm know where and who gets submittals. 4. Since this was a straightforward project in terms of design, the 14-day plan review was more than adequate.
Document Control	EPM used an Excel spreadsheet to document and track all submittals and other contractual documents. D-B firm used the same spreadsheet for document control. Multiple use of the same spreadsheet provided adequate document control for the project.
Schedule and Contract Time	Time to complete the project was adequate. It was noted that the Contractor did not work Saturdays or Sundays during construction.
Quality Control - Design	Designer provided QC checked plans and specifications in accordance with their written Quality Management Plan. Several of the design issues that developed early in the design phase were a result of lack of knowledge and experience working with MDT design standards and requirements.
Quality Control - Construction	D-B Firm did a fair job with their QC. The QC requirements and who is responsible for specific QC testing should be better defined in the RFP or in separate QC Guidelines.

Coordination With MDT Functional Units	RFP should list the key contacts for MDT Functional Units responsible for the review and approvals so the EPM and D-B Firm know where and who gets submittals.
Change Orders	There have been five change orders approved for the project for an increase of $87,810.42. Most of the additional cost ($73,570.57) resulted from MDT's decision to replace the four cattle guards on the interchange ramps that was a change to the original scope of work for the project. The remaining increases of $14,239.85 resulted in changes to items of work (barrier rail conduit, new traffic signs and paving under the guardrail) that were not clearly defined in the RFP or in the D-B Firm's Technical Proposal.
Claims	The RFP included a section (Section V- Subsection Y. and Z.) that outlined the Issue Resolution Process for both design and construction issues. The intent of this process was not to usurp or override the standard MDT Claims process, but to provide a timely method to address and resolve project related design and construction issues before they escalated to claim status. It was recommended that the RFP text be revised to provide a better understanding and to clarify the how, why and when to use the Issue Resolution Process.
New Technology or Construction Methods	1. Use of the rectangular concrete column around pipe pile to provide the same aesthetic appearance as the original concrete columns. 2. MDT's process for addressing new technology or construction methods and innovative ideas did not take full advantage of those offered in the D-B Firm's Technical Proposal. *(Author's Note: MDT did not take decisive action to review and either approve or disapprove proposed new technology or construction methods and innovative ideas presented in the D-B Firm's Technical proposal. This process was refined and implemented for the third and final MDT D-B Pilot Project RFP [Dupuyer – SE Reconstruction Project]).*
Innovative Items	See Item #2 under New Technology or Construction Methods above.
R/W issues	Right of way provided was adequate to construct the project. It was recommended that future D-B projects include a requirement that the D-B Firm designate a Utility Coordinator to provide liaison and single-point contact for all utility and communications work. *(Author's Note: The third and final MDT D-B Pilot Project RFP [Dupuyer – SE Reconstruction Project] included this requirement.)*
Permit Issues	There was some confusion and delay obtaining approval of the Storm Water Pollution Prevention Permit (SWPPP), but the D-B Firm worked with MDT Environmental Bureau and DEQ to successfully obtain the permit.
Other Items/Issues	Comments from the MDT field crew included: 1. The best aspect of the D-B process was the efficiency of the subcontractors and overall speed of design and construction completion. 2. The least desirable aspect of the D-B process was the lack of communications between the D-B Contractor, designer and MDT and the lack of training in the D-B process for all parties. 3. Overall, the D-B process resulted in a quality project.

AGENDA ITEMS	MDT BRIDGE DESIGN MANAGER
Contract Administration	The bridge portion of the project progressed very well from design through construction. Bridge Bureau had limited involvement during construction of the project, but did provide plan and specification reviews for the bridge items of work. The overall time to complete the project was much shorter than the typical design/bid/build process.
Specific Issues and Solutions	As a result of issues involving rebar placement requirements that developed during the deck plan review, it was recommended that more detail be provided in the RFP regarding specific MDT requirements for deck joint removal and replacement.
Plans & Specifications Approval Process	Plans and specifications review and approval process was very efficient and the 14-day review and approval period was adequate. The D-B review and plan approval process was much easier to perform and required less time and resources than the typical consultant plan review process. However, it did require staff to suspend other work in order to complete the D-B review within the 14-day period.
Document Control	No comments noted.
Schedule and Contract Time	No comments noted.
Quality Control - Design	Plans and specifications submittals did not always include the QC checklists as required by the D-B Firm's Quality Management Plan.
Quality Control - Construction	No comments noted.
Coordination With MDT functional Units	No comments noted.
Change Orders	No comments noted.
Claims	No comments noted.
New Technology or Construction Methods	No comments noted.
Innovative Items	Use of the rectangular concrete column around pipe pile to provide the same aesthetic appearance as the original concrete columns was innovative, economical and aesthetically pleasing.
R/W issues	No comments noted.
Permit Issues	No comments noted.
Other Items/Issues	Public notification of the construction activities did not appear adequate based on experience driving through the project during construction. Should be more public notification requirements placed on the D-B Firm in the RFP instead of being MDT's responsibility.

AGENDA ITEMS	D-B CONTRACTOR
Contract Administration	1. There were some flaws in the RFP, but overall the process was a success. 2. Some items of work were not well defined or clearly described in the RFP and led to issues related to scope of work for guardrail replacement, existing sign replacement and specific paving requirements for areas behind the new guardrail. MDT did not identify and notify the D-B Firm of discrepancies between the RFP requirements and the Technical Proposal requirements related to these items prior to start of work. *(Author's Note: MDT did not take decisive action to review and provide written notification to the D-B Firm of any discrepancies noted between the RFP and their Technical Proposal prior to start of work. This process was refined and implemented for the third and final MDT D-B Pilot Project RFP [Dupuyer – SE Reconstruction Project]).*
Specific Issues and Solutions	1. The RFP included a section (Section V- Subsection Y. and Z.) that outlined the Issue Resolution Process for both design and construction issues. The intent of this process was not to usurp or override the standard MDT Claims process, but to provide a timely method to address and resolve project related design and construction issues before they escalated to claim status. It was recommended that the RFP text be revised to provide a better understanding and to clarify the how, why and when to use the Issue Resolution Process.
Plans & Specifications Approval Process	1. This process went very well, primarily because of the person-to-person contact between the D-B Firm design and construction staff and the MDT functional unit reviewers. 2. The 14-day review and approval period was adequate for the project. 3. It was recommended that an intermediate submittal be required (65% complete) before the 90% complete submittal so major changes can be incorporated early in the process. This would allow any minor revisions necessary after the 90% complete plans are stamped "Released for Construction" to be documented and changed during the as-built process.
Document Control	The D-B firm relied on the spreadsheet prepared and maintained by the MDT EPM to document and track submittals.
Schedule and Contract Time	1. Contract time was adequate. 2. It is recommended that for future design-build projects, "substantial completion" be specifically defined in the RFP to avoid confusion and misunderstanding later in the process, especially as it relates to weather restricted items of work and the "as-built" plans.
Quality Control - Design	Design consultant followed their establish QC plan. This process went very well, primarily because of the person-to-person contact between the D-B Firm design and construction staff and the MDT functional unit reviewers.
Quality Control - Construction	1. It was suggested that for future D-B projects, MDT provide all QC services as typically performed for design/bid/build projects. 2. Providing QC Guidelines with each party's role clearly defined in the RFP would reduce the confusion over responsibility. 3. It was recommended that additional training in the D-B process and the relationship between QC, QA and IA be provided for MDT, contractors and design consultants. 4. Consultants performing QC testing for the D-B Firm also need training to become familiar with MDT "testing methods", since most have not previously performed certain tests.
Coordination With MDT Functional Units	This process went very well, primarily because of the person-to-person contact between the D-B Firm design and construction staff and the MDT functional unit reviewers.

Change Orders	No comments noted.
Claims	It was recommended that the RFP text be revised to provide a better understanding and to clarify the how, why and when to use the Issue Resolution Process.
New Technology or Construction Methods	1. Use of slip forming for the bridge barrier rail saved time, was cost effective and resulted in aesthetically pleasing barriers on the bridge. 2. Use of the rectangular concrete column around pipe pile to provide the same aesthetic appearance as the original concrete columns was innovative, economical and aesthetically pleasing. 3. MDT's process for addressing new technology or construction methods and innovative ideas did not take full advantage of those offered in the D-B Firm's Technical Proposal. *(Author's Note: MDT did not take decisive action to review and either approve or disapprove proposed new technology or construction methods and innovative ideas presented in the D-B Firm's Technical proposal. This process was refined and implemented for the third and final MDT D-B Pilot Project RFP [Dupuyer – SE Reconstruction Project]).*
Innovative Items	See Item #3 under New Technology or Construction Methods above.
R/W issues	The electrical utility owner was not responsive to the D-B Firm's request for approval of relocation plans for several poles. It was recommended that future D-B projects include a requirement that the D-B Firm designate a Utility Coordinator to provide liaison and single-point contact for all utility and communications work and MDT conduct pre-proposal meetings with impacted utility companies. *(Author's Note: The third and final MDT D-B Pilot Project RFP [Dupuyer – SE Reconstruction Project] included this requirement.)*
Permit Issues	The D-B Firm had difficultly securing the Storm Water Pollution Prevention Permit (SWPPP) from DEQ. Since this was a design-build project, the D-B Firm was responsible for obtaining and monitoring the SWPPP. However, since no guidance was provided in the RFP as to the "Order of Operators" and the "Responsibilities of each Operator", processing of the application resulted in confusion and delays. For future D-B projects, MDT will clearly define the Order of Operators and their responsibilities in the RFP.
Other Items/Issues	1. D-B Firm liked the process and would participate in future design-build projects. 2. The best aspect of the D-B process was the reduced time and time is money to a contractor. 3. The least desirable aspect of the D-B process was resolution of issues that are not clearly defined in the RFP or the Technical Proposal. The intent, purpose and outline of the Issue Resolution process should be expanded to promote its effective use to resolve issues before the claims process is necessary. 4. More training in the D-B process is needed for all parties involved in design-build projects.

AGENDA ITEMS	DESIGN CONSULTANT
Contract Administration	1. Would like to have more direct communications between the D-B contractors and designers.
Specific Issues and Solutions	1. As the designer, it was difficult to obtain consensus from the electrical utility company for proposed relocation plans. Proposed changes to RFP requirements as noted should eliminate or at least facilitate this process. For future D-B projects, MDT is proposing to include a requirement that the D-B Firm designate a Utility Coordinator to provide liaison and single-point contact for all utility and communications work and MDT conduct pre-proposal meetings with impacted utility companies. *(Author's Note: The third and final MDT D-B Pilot Project RFP [Dupuyer – SE Reconstruction Project] included this requirement.)*
Plans & Specifications Approval Process	1. The 14-day review and approval time as well as the less critical type reviews streamlined the process and made it very timely. 2. It was recommended that an intermediate submittal be required (65% complete) before the 90% complete submittal so major changes can be incorporated early in the process. This would allow any minor revisions necessary after the 90% complete plans are stamped "Released for Construction" to be documented and changed during the as-built process.
Document Control	No comments noted.
Schedule and Contract Time	Time allowed for design was adequate.
Quality Control - Design	The designer followed their written Quality Management Plan.
Quality Control - Construction	No comments noted.
Coordination With MDT Functional Units	No comments noted.
Change Orders	No comments noted.
Claims	No comments noted.
New Technology or Construction Methods	See New Technology or Construction Methods comments under the previous D-B CONTRACTOR section.
Innovative Items	No comments noted.
R/W issues	No comments noted.
Permit Issues	See Permit Issues comment under the previous D-B CONTRACTOR section.
Other Items/Issues	1. The overall D-B process was great and a very good project delivery tool. 2. The best aspect of the D-B process for designers was the short review and approval time and the streamlined plan review process. 3. The least desirable aspect of the D-B process for designers was the lack of communications and coordination between the designer, contractors and MDT during construction.

V. CONCLUSIONS

Use of the Design-Build contracting method for the second MDT Pilot Project has accomplished the purpose of the program as stated in the work plan by producing a savings in time and reduction in the MDT resources necessary to design and construct the project. The savings in time is clearly evident since the project proceeded from preliminary engineering through R/W acquisition to contract award in six months and the design and construction was substantially completed in six months. The total one year time period is much less than similar design/bid/build projects that usually require as much as two years from preliminary engineering to contract advertisement, plus the time necessary to award and construct the project, typically an additional six to nine months. This project has been another positive step in the Design-build Pilot Program process that will allow MDT to explore this innovative contracting method. Based on in-house and industry reactions and comments received during the post construction de-briefings, the initial opinion is that the Design-Build contracting method has been successful for this project.

Based on the current Design-Build Pilot Program process, the key items identified that enhanced this project include:

Selection and Award Process

- Overall, the MDT design-build pilot program provides a fair and equitable procedure for evaluating, scoring and selecting a Design-Build Firm.

- The selection and award process for this project was unique because two of the Firms short listed in the RFQ phase were later considered non-responsive by MDT for not complying with the requirements outlined in the RFP.

- MDT Design-Build Guidelines were updated to include a "best and final" procedure to be followed if all Bid Price Proposals exceed the Engineer's Estimate by more than 25%.

- Bid Price Proposals were submitted 24 days after the Technical Proposals.

Design and Construction Process

- The 12-month design-build process substantially reduced the total project delivery time from the 2 to 3 years typically required to deliver a design/bid/build project. This project proceeded from preliminary engineering through R/W acquisition to contract award in 6 months and the design and construction was substantially completed in 6 months.
- Provided MDT functional unit staff and field crew limited advance design-build training so they were familiar with the process and their role in review and approval of the design, plans and specifications and construction management and inspection.
- All design and construction stakeholders in this project generally felt it was a good process that required less MDT manpower, resulted in a quality product and is a useful tool to expedite project delivery.

Based on the current Design-Build Pilot Program process, the key items identified as shortcomings to this project include:

Selection/Award Process

- RFP must clearly outline the procedure for addressing alternatives and options that are in addition to or in conflict with the RFP criteria in the Technical Proposal.

- There were concerns expressed by D-B Firms that MDT's design-build process did not follow the generally accepted processes used by owners in the private sector that allow closed-door discussions and negotiations between D-B Firms and owners when selecting and awarding contracts. Since design-build projects built with Federal Aid funds must meet FHWA requirements for selection based on qualifications and price, MDT's D-B process must be more open to public scrutiny and review than private sector projects.

Design and Construction Process

- There could have been more frequent and better communications between Contractor, Designer and MDT.

- It was recommended that prior to future D-B projects, additional D-B training be provided to MDT staff as well as designers and contractors.

- It was recommended that an intermediate submittal be required (65% complete) before the 90% complete submittal so major changes can be incorporated early in the process. This would allow any minor revisions necessary after the 90% complete plans are stamped "Released for Construction" to be documented and changed during the as-built process.

- The RFP included a section that outlined the Issue Resolution Process for both design and construction issues. The intent of this process was not to usurp or override the standard MDT Claims process, but to provide a timely method to address and resolve project related design and construction issues before they escalated to claim status. It was recommended that this section of the RFP text be revised to provide a better understanding and to clarify the how, why and when to use the Issue Resolution Process.

- MDT's process for addressing new technology or construction methods and innovative ideas did not take full advantage of those offered in the D-B Firm's Technical Proposal. *(Author's Note: MDT did not take decisive action to review and either approve or disapprove proposed new technology or construction methods and innovative ideas presented in the D-B Firm's Technical proposal. This process was refined and implemented for the third and final MDT D-B Pilot Project RFP [Dupuyer – SE Reconstruction Project]).*

- The bridge related plan and specification review and approval process was very efficient and the 14-day review and approval period was adequate. The D-B review and plan approval process was much easier to perform and required less time and resources than the typical consultant plan review process. However, it did require staff to suspend other work in order to complete the D-B review within the 14-day period.

- Some items of work were not well defined or clearly described in the RFP and led to design and construction issues related to scope of work for guardrail replacement, existing sign replacement and specific paving requirements for areas behind the new guardrail. MDT did not identify and notify the D-B Firm of discrepancies between the RFP requirements and the Technical Proposal requirements related to these items prior to start of work. *(Author's Note: MDT did not take decisive action to review and provide written notification to the D-B Firm of any discrepancies noted between the RFP and their Technical Proposal prior to start of work. This process was refined and implemented for the third and final MDT D-B Pilot Project RFP [Dupuyer – SE Reconstruction Project]).*

- It was recommended that future D-B projects include a requirement that the D-B Firm designate a Utility Coordinator to provide liaison and single-point contact for all utility and communications work and MDT conduct pre-proposal meetings with impacted utility companies. *(Author's Note: The third and final MDT D-B Pilot Project RFP [Dupuyer – SE Reconstruction Project] included this requirement.)*

- The D-B Firm had difficultly securing the Storm Water Pollution Prevention Permit (SWPPP) from DEQ. Since this was a design-build project, the D-B Firm was responsible for obtaining and monitoring the SWPPP. However, since no guidance was provided in the RFP as to the "Order of Operators" and the "Responsibilities of each Operator", processing of the application resulted in confusion and delays. For future D-B projects, MDT will clearly define the Order of Operators and their responsibilities in the RFP.

The lessons learned from this project and the other two Design-Build Pilot Projects will provide relevant and valuable information that can be utilized by legislators in deliberating the merits of continuing the design-build contracting program and providing an additional tool that MDT can use to expedite project delivery.